REMARKS

The Office Action of 10/09/2008 has been carefully considered.

Claims 110 and 124 were indicated as containing allowable subject matter, which indication is appreciatively acknowledged.

Claims 88, 95 and 116-119 were rejected as being unpatentable over Sugiyama in view of Leedy. Claims 106-108, 111-114, 120-122 and 125-128 were rejected as being unpatentable over the same base combination further in view of Faris and Sakui. Claims 109 and 123 were rejected as being unpatentable over the prior combination further in view of Daberko. These rejections are respectfully traversed.

The claims have been amended for greater clarity. Reconsideration is respectfully requested.

Rejection of Claims 88, 95 and 116-119 as Unpatentable Over Sugiyama in View of Leedy

The rejection of claim 88 states in part:

> [S]ugiyama fails to disclose the following:
>
> a) the second substrate is a thinned substrate having circuitry formed thereon.
>
> However, Leedy discloses a thinned substrate (For Example: See column 5 Lines 62-68). It would have been obvious…to modify the semiconductor device of Sugiyama to include a thinned substrate as disclosed in Leedy *because it aids in providing a structural integrity* (For Example: See Column 5 Lines 62-68 and Column 6 Line 15*)*.

The foregoing "motivation" is specious; Applicant respectfully disagrees.

The concept of structural integrity arises in Leedy precisely because Leedy pertains to thin integrated circuit structures, or "membranes," having a thickness dimension of less than 50 microns, for example, as compared to the typical thickness of an IC wafer of 300-500 microns. That is, the IC membranes of Leedy are typically 10 times or more thinner than a typical IC wafer. Dielectric layer stresses can easily cause such a thin membrane to fracture and disintegrate during attempted formation. The use of low stress dielectric as described in Leedy provides for the structural integrity of such thin membranes, allowing them to be successfully formed and used.

Sugiyama, of course, does not teach the use of a thinned substrate (Office Action, page 2, final line). There is no indication in Sugiyama that the substrates are anything but ordinary thickness (e.g., 300-500 microns). The structural integrity of substrates of such ordinary thickness without the need of any further measures is well-established and demonstrated. Hence, contrary to the rejection, Sugiyama has *no need* of the techniques of Leedy for ensuring structural integrity of a thinned substrate or IC membrane. To argue otherwise would be a classic instance of circular logic. *The rejection therefore cannot be maintained.*

As no reasonable motivation has been identified for combining the teachings of the references in the manner indicated, the cited references are not believed to teach or suggest the invention of claim 88.

The same argument applies equally to claims 116 and 119.

Hence, it may be seen that the cited references does not teach or suggest the invention of claims 88, 116 or 119.

The various combinations of references used to reject the dependent claims do nothing to address the teachings absent from the base combination as noted above. Therefore, the dependent claims are believed to be allowable as depending on an allowable base claim.

Advisory Action

The Advisory Action of 01/29/2009 attempts to bolster motivation for combining the teachings of the references with the following statement:

> [A] thinned substrate aids in providing structural integrity by smoothing the surface. A smooth surface is provided on the substrate before a circuit is placed on it.

This statement, unfortunately, only raises additional questions. In the case of Sugiyama, circuits are fabricated on smooth surfaces of two different substrates, which are then bonded face to face, bonding together opposing contacts. The surfaces are presumably lapped and polished prior to circuit fabrication using conventional wafer manufacturing techniques. Although this lapping and polishing does not produce a thinned substrate in accordance with the terms of the claims as amended (i.e., a substrate that is half as thin or less than another substrate to which it is to be bonded), it produces a surface of comparable smoothness as the surfaces in Leedy, for example. Furthermore, the term "structural integrity" is used in Leedy to refer to the ability of a structure to withstand forces that would otherwise cause cracking or disintegration. If the term is used in that same sense by the Examiner, then smoothness and structural integrity are unrelated.

Withdrawal of the rejections and allowance of claims 88, 95, 106-109, 111-114, 116-123 and 125-128 is respectfully requested.

Respectfully submitted,

/Michael J. Ure/

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